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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,114	06/08/2001	Christian Goire	T3006-906838	5086

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MILES & STOCKBRIDGE PC  
1751 PINNACLE DRIVE  
SUITE 500  
MCLEAN, VA 22102-3833

EXAMINER

RAMPURIA, SATISH

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/786,114

Applicant(s)

GOIRE ET AL.

Examiner

Satish S. Rampuria

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1. ☐ Certified copies of the priority documents have been received.
  - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***DETAILED ACTION***

1. This action is in response to the application filed on June 08, 2001.
2. This is in response to the preliminary amendment received on June 08, 2001.
3. Claims 1-5 have been cancelled.
4. Claims 6-16 added as new claims.
5. Claims 6-16 are pending.

***Claim Rejections - 35 USC § 112, second paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, on line 9, the limitation, "so-called" is unclear as to second subset is constituted by auxiliary functions or it could be any function used by virtual machine.

The rejection of the base claim is necessarily incorporated into the dependent claims.  
Clarification and/or correction are required.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject

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matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ritchey**, hereinafter called Ritchey the programming language JAVA, published in September 22, 1995, in view of **Chan** et al., hereinafter called Chan, US Patent No. 6,005,942 and further in view of **Necula** et al., hereinafter called Necula, US Patent No. 6,128,774.

As per claim 6, Ritchey discloses:

- *A method for verifying transformation of a source code* (page, 332, "Bytecode Verifier... code passes through a bytecode verifier"), *said source and transformed codes being associated with virtual machines* (page 331, "The Running of Code... code compile for the Java Virtual Machine"), characterized in that it comprises at least the following steps:

- *determining, for each of said source and transformed codes, a common subset, constituting a single virtual machine that factors in the behavior of said source and transformed codes* (page 331, "The loading of code... done... Class loader... interpreter... Java files... is referenced... also any inherited or referenced classes that the code will need" and page 332, "Class Loader... classes... inherited from... classes");

- *determining, for each of said source and transformed codes* (page 336, "compile Java source code into binary"), *second subset constituted by a plurality of so-called auxiliary functions used by said single virtual machine* (page 336 "instructions set for the JVM... Each instruction in Java consist of an opcode followed by an optional operand"), *said auxiliary functions representing residual differences between said source and transformed codes* (page 334, "Java Virtual Machine... implemented in the class file");

- *associating said auxiliary functions in pairs* (page 336, “Each instruction in Java consist of an opcode followed by an optional operand”), *a first auxiliary function of each pair belonging to said second subset associated with said source code and a second auxiliary function of each pair belonging to said second subset associated with said transformed code* (page 334, “Java Virtual Machine... implemented in the class file”);
- *verifying a given corresponding property between said auxiliary functions of all of said pairs* (page 332, “Bytecode Verifier... checks line for consistency with the Java specification and program (consist of functions) itself”);
- *verifying that said transformation of the source code into a transformed code satisfies said given correspondence property* (page 332, “Bytecode Verifier... checks line for consistency with the Java specification and program (consist of functions) itself”). Ritchey teaches the basics of JAVA Technology. The enabling technology of applicant’s invention.

Ritchey did not explicitly disclose transformed code designed for the embedded system.

However, Chan disclose in an analogous system download an application onto the smart card (col. 6, lines 57-60 “FIG. 3B also allows for a secure and managed post issuance download of an application onto a smart card”). Where rendering program is processed on JAVA virtual machine (col. 1, lines 61-62).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method to download an application onto the smart card as taught by Chan in corresponding to the method of transformation of code as taught by Ritchey. The modification would be obvious because of one of ordinary skill in the art would be

motivated to download an application which has been transformed via a transfer mechanism as suggested by Chan (col. 3, lines 1-7).

Neither Ritchey nor Chan disclose that data is described by the pairs of functions.

However, Necula discloses in an analogous system data is described by the pairs of functions (col. 7, lines 25-28 “The configuration data... describes... precondition-postcondition pairs, all of the functions... untrusted code... permitted to invoke”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of secure execution of code using pair of functions for pre and post conditions as taught by Necula into the combination system taught by Ritchey and Chan. The modification would be obvious because of one of ordinary skill in the art would be motivated to have pair of source and transformed data for secure execution as suggested by Necula (col.2, lines 8-21).

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ritchey, Chan, Necula**, in view of **Bristol**, hereinafter called Bristol, US Patent No. 4,736,320. **As per claims 7 and 8**, the rejection of claim 6 is incorporated and further neither Ritchey nor Chan nor Necula discloses logically relationship between functions.

However, Bristol discloses in an analogous system using logically relationship between functions (col. 4, lines 46-59 “organizes the control system into logically distinct application subsystems... provides distinct representations for logically different control... command

statements... define precise application function roles... and in the relationship between the functional... control program; and... it uses logical and/or standard application functions”)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of including logically relationship between functions as taught by Bristol into the method of combination system of transferring code to smart card as taught by Ritchey, Chan, and Necula. The modification would be obvious because of one of ordinary skill in the art would be motivated to include logic with an identity relationship between functions to implement the desired control functions as suggested by Bristol (col. 4, lines 35-44).

10. Claims 9, 10, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ritchey, Necula, Bristol**, in view of **Chan** and in view of **Drupsteen et al.**, hereinafter called **Drupsteen**, US Patent No. 5,856,659.

**As per claims 9 and 10**, the rejection of claims 6 and 7 is incorporated respectively, and further neither Ritchey nor Chan nor Necula nor Bristol discloses transforming code into memory chip of a card.

However, Drupsteen discloses in an analogous system transforming code into memory chip of a card. (col. 2, lines 59-61 “A card command... stored in memory... executed upon transfer to the card memory of a card”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of transforming the code into the card as

taught by Drupsteen into the combination system as taught by Ritchey, Chan, Necula, and Bristol. The modification would be obvious because of one of ordinary skill in the art would be motivated to download/modified the code into the memory of a card to perform the specific functions as instructed in the downloaded/modified code as suggested by Drupsteen (col. 1, lines 5-15).

**As per claims 11 and 12**, the rejection of claims 9 and 10 is incorporated respectively, and further neither Ritchey nor Necula nor Bristol nor Drupsteen disclose transformed code is a program written in the virtual machine language, and chip card stores a plurality applications.

However, Chan disclose in an analogous system use of virtual machine via JAVA card and storing multiple application on the smart card (col. 8, lines 35-37 “virtual machine is the JAVA Card 2.0 API which provides a high level framework for writing applets for JAVA Card based platforms” and col. 4, lines 45-49 “Applications... run on the smart card via instructions... applications can include any application... run on a smart card, such as stored value, credit, debit, transit, and loyalty”). It is interpreted in order to use JAVA card program must be written in virtual machine language e.g. JAVA.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the code written in virtual machine and card to store multiple applications as taught by Chan in corresponding to transfer the data to the card and optimize the code in the combination system as taught by Ritchey, Necula, Bristol, and Drupsteen. The modification would be obvious because of one of ordinary skill in the art would be motivated to transfer the code in the language of virtual machine to the card and to store



multiple application to run different types of data on the card as suggested by Chan (col. 1, lines 51-54).

11. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ritchey, Chan, Necula, Bristol, Drupsteen**, and in view of **Wilkinson** et al., hereinafter called Wilkinson, US Patent No. 6,308,317.

**As per claims 13-16** the rejection of claims 9, 10, 11, and 12 is incorporated respectively, and further neither Ritchey nor Chan nor Necula nor Bristol nor Drupsteen disclose source code is program written in a "JAVA" virtual machine and said transformed code is program written in a "JAVA CARD" virtual machine.

However, Wilkinson discloses in an analogous system with source code written in JAVA virtual machine and transformed code for JAVACARD™ (col. 8, lines 25-34, "These source code... prepared... compiled in a Java... development environment... class files... are produced... corresponding to their respective class Java source code... class files... follow the standard class file format... of the Java virtual machine" and col. 8, lines 41-43 "the card class file converter... postprocessor... processes... class files... encoded in the standard Java class file format... using a string... produce a Java card class file 27 in a card class file format").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the source and transformed code written or download in JAVA virtual machine and JAVA CARD respectively, as taught by Wilkinson in corresponding to the combination system taught by Ritchey, Chan, Necula, Bristol, and Drupsteen. The modification would be obvious because of one of ordinary skill in the art would be motivated to

provide source code to JAVA virtual machine to produce code for JAVA CARD™ as suggested by Wilkinson (col. 1, lines 16-19).

*Response to Arguments*

1. Applicant's arguments with respect to claims have been considered but they are not persuasive.

In the remarks, the applicant has argued that:

- Neither Ritchey, Chan nor Necula disclose the first subset, second subset and associating steps as claimed in claim 1.
- The references simply do not teach nor suggest each and every claimed feature, and the Examiner failed to provide a sufficient legal basis to support a rejection under 35 USC § 103.
- Merely stating that one of ordinary skill in the art would be motivated to include logic with an identity function to implement the desired control functions does not meet the requirement of showing where in the reference this motivation occurs or how the teachings of each reference can be combined.

Examiner's answer:

- Ritchey discloses functions that are implemented by Java Virtual Machine, which includes the first and second subsets, first subset as a Java or source code and second subset as a binary or transformed code (see the rejection of this office action) and associate steps that would be similar to the limitations as claimed in claim 1.

- Every references used are in the art of the invention, the rejection clearly points out where the reference teaches the claimed features and why it would have been obvious to combine their teachings with proper motivation from the art. Applicant only makes general allegations and does not point out any errors in the rejection. Rather, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.
- Bristol teaches method and apparatus for translating a computer program for a control systems for a variety of industrial applications. Further, Bristol disclose the complete implementation of which exhibits the following characteristics: (1) it organizes the control system into logically distinct application subsystems according to processing and control activities; (2) it provides distinct representations for logically different control activities; (3) it orders the display of configured data to make it predictable and easy to read and understand; (4) it represents and displays the program structure graphically, in a way which guides the eye to and through critical relationships; (5) it employs command statements which define precise application function roles, to reduce ambiguity in the underlying intent and in the relationship between the functional elements of a control program; and (6) it uses logical and/or standard application functions and practices to account for implied configuration activities (see col. 4, lines 45-60). Therefore, it will not be possible not having logical relationship within a computer program. Ritchey, Chan, Necula and Bristol are all computer related art. Applicant only makes general allegations and does not point out any errors in the

rejection. Rather, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, the rejection is proper and maintained herein.

### ***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Satish S. Rampuria** whose telephone number is **(571) 272-3732**. The examiner can normally be reached on **8:30 am to 6:00 pm** Monday to Friday except every other Friday and federal holidays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Kakali Chaki** can be reached on **(571) 272-3719**. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Satish S. Rampuria  
Patent Examiner  
Art Unit 2124  
01/10/2005

A handwritten signature in black ink, appearing to read 'T. Ingberg', with a long, sweeping horizontal line extending to the right.

**TODD INGBERG**  
**PRIMARY EXAMINER**